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HAYNES AND BOONE, LLP
901 Main Street
Suite 3100
Dallas, TX 75202

EXAMINER	
CHUMPITAZ, BOB R	

ART UNIT	PAPER NUMBER
4115	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/687,224	SHAO-CHI ET AL.	
	Examiner	Art Unit	
	BOB CHUMPITAZ	4115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☒ Claim(s) *8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/16/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/03/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The following is a Non-Final First Office Action in response to the Patent Application filed October 16, 2003. Claims 1-22, as originally filed are presented for examination on the merits.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on February 3, 2004 is in compliance with 37 CFR 1.97 and 1.98. Accordingly, to information disclosure statement is being considered by the examiner.

Claim Objections

Claim 8 is objected to because of the following informalities: "fab;". ";" It appears applicant made a typographical error. Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-5 and 13-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-5 are directed to a software mechanism, and claims 13-20 are directed to a software product.

The independent claims 1 and 13 are directed towards mechanisms apparatus for "maintaining", "collecting", "providing", "assigning", "exchanging", and "product". Since the claims are directed to a system without including another statutory class of invention (i.e.

machine, manufacture, or composition of matter), these claims do not have any structure but solely recite instructions which do not fall within any of the statutory classes.

Similarly, computer programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. See MPEP 2106.01.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 11-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Yang et al. U.S. Publication No. 2003/0233290 (hereinafter referred to as Yang).

As per claim 1, Yang discloses an enterprise control system for use in an environment for producing semiconductor-related product, the system comprising: a first mechanism for maintaining an exchange of information between a primary provider and a secondary provider, the information pertaining to the semiconductor-related product (pg. 4, ¶ [0056, Multi-Lot Processor where buyers and suppliers communicate in the supply chain management system, see Fig. 4 and associated text; see also pg. 6, ¶ [0073, database holding information using the supply

chain management system]); a second mechanism for collecting the exchanged information (pg. 6, ¶ [0072, correlation processor for correlating input and output information among clients]); a third mechanism for collecting event information upon an occurrence of a predetermined event element associated with the semiconductor-related product (pg. 1, ¶ [0006, internet is an electronic link among buyers and suppliers for exchange of supply chain information]); and a fourth mechanism for providing the collected exchanged information and the collected event information to a customer associated with the semiconductor-related product (pg. 6, ¶ [0093, reports that show work in progress information]).

As per claim 2, Yang discloses a fifth mechanism for assigning the predetermined event element to the semiconductor-related product at the secondary provider (pg. 6, ¶ [0071, business logic means for accessing information for executing supply chain management functions for the clients]).

As per claim 3, Yang discloses wherein the first mechanism uses a first network for exchanging information between the primary and secondary providers, and the fourth mechanism uses a second network, different from the first network (pg. 3, ¶ [0035, hardware block diagram of a computer system network for the supply chain management system; see Fig. 9 and associated text]; see also, pg. 6, ¶ [0070, computer system network]).

As per claim 4, Yang discloses wherein the first mechanism uses a dedicated bi-directional path of the first network, and wherein the second mechanism is for continuously collecting the exchanged information (pg. 6, ¶ [0070, supply chain management services to the buyers and suppliers in a network via internet connection]).

As per claim 5, Yang discloses wherein the fourth mechanism is an enterprise control system that includes a customer interface in the form of a web browser (pg. 16, ¶ [0179, onscreen operations or other i-commerce methods of communication provided to buyers and suppliers]; see also, pg. 6, ¶ [0070, supply chain management service]).

As per claim 6, Yang discloses a method of business-to-business exchange between providers in a semiconductor manufacturing environment, the method comprising: exchanging a product from a primary provider to a secondary provider (pg. 6, ¶ [0070, a two-way communication redundancy process for providing services to the buyers and suppliers (clients) via a network]); transmitting information associated with the product throughout a virtual fab, wherein the transmission of information occurs continuously and multi-directionally between the providers through the virtual fab (pg. 3, ¶ [0050, multiple buyers and multiple suppliers are able to exchange information over the internet]); storing at least a portion of the transmitted information (pg. 6, ¶ [0072, the processed data is stored in the processed data store which can be communicated to the clients]); and providing the portion of the transmitted information to a customer in response to a customer request (pg. 6, ¶ [0072, the processed data is stored in the processed data store which can be communicated to the clients]; see also, pg. 16, ¶ [0186, buyer request]).

As per claim 7, Yang discloses wherein the primary provider is a semiconductor fab and the product is a lot of semiconductor wafers (pg. 4, ¶ [0059, semiconductor manufacturing environment where both goods and services are involved with wafer lots]; see also, pg. 5, ¶ [0063, input is a wafer lot]).

As per claim 11, Yang discloses wherein the information includes product lot identification and product lot history (col. 3, ¶ [0024-0025, lot tracking stores the genealogy of a lot and lot history], see also, pg 14, [0165, lot tracking]).

As per claim 12, Yang discloses wherein the step of providing uses a service system interface for communicating between a computer system associated with the customer and a computer system associated with the semiconductor fab (pg. 16, ¶ [0179, onscreen operations or other i-commerce methods of communication provided to buyers and suppliers]; see also, pg. 6, ¶ [0070, supply chain management service]).

As per claim 13, Yang discloses a system of business-to-business exchange between entities in a semiconductor manufacturing environment, the system comprising: a product with exchangeable information interposing a primary provider and a secondary provider (pg. 6, ¶ [0070, data server for a two-way communication redundancy process for providing services to the buyers and suppliers (clients) via a network]); a plurality of event elements assigned to the product through a virtual fab (pg. 4, ¶ [0059, semiconductor manufacturing environment processing stages including fab, wafer sort, assembly and final test]); and an enterprise control entity adapted for the exchange of information associated with the product through the virtual fab, the enterprise control entity being adapted to provide multi-directional information manipulation throughout the virtual fab (pg. 5, ¶ [0068-0069, supply chain management system containing a multi-lot processor with communication means via internet]).

As per claim 14, Yang discloses wherein the primary provider is a semiconductor fab facility (pg. 2, ¶ [0020, buyer and supplier within the semiconductor manufacturing industry).

As per claim 15, Yang discloses wherein the secondary provider is a sub-contractor (pg. 2, ¶ [0020, assembly supplier]).

As per claim 16, Yang discloses wherein the primary provider is a semiconductor design house (pg. 2, ¶ [0019, IC-design house deals with multiple suppliers that provide various outsourcing functions at different supplier stages]).

As per claim 17, Yang discloses wherein the secondary provider is a equipment vendor (pg. 2, ¶ [0020, assembly supplier]).

As per claim 18, Yang discloses wherein the event elements of the primary provider and secondary provider comprise product process steps, the event elements track the product through the virtual fab (pg. 4, ¶ [0059, semiconductor manufacturing environment processing stages including fab, wafer sort, assembly and final test]).

As per claim 19, Yang discloses wherein the event elements include manufacturing process checkpoints (pg. 5, ¶ [0062, purchase orders for multistage processing in order for work to be performed through the stages by authorization and specifying the terms and conditions]; see also, pg. 12 ¶ [0134, data integrity unit 88-6 on Fig. 11]).

As per claim 20, Yang discloses wherein at least one of the entities is a service system interface for communicating between a computer system associated with a customer and a computer system associated with the semiconductor fab (pg. 1, ¶ [0006, internet an efficient electronic link among buyers and suppliers for exchange of supply chain information]; see also, pg. 3, ¶ [0050, exchange supply information rapidly and essentially in real time via internet]; see also, pg. 6, ¶ [0072, message file connector for incoming and outgoing communications over the internet]).

As per claim 21, Yang discloses a software program stored on a recordable medium, the software program being used for tracking and managing a plurality product and information through a semiconductor manufacturing environment, the software program comprising: instructions for establishing a virtual fab with a plurality of entities, each entity associated with an internal process to a semiconductor fab or an external process to the semiconductor fab (pg. 6, ¶ [0071, software block diagram for the supply chain management system, see Fig. 10 and associated text]; see also, pg. 6, ¶ [0070, hardware block diagram, see Fig. 9 and associated text]); instructions for a plurality of event elements for tracking the product through the plurality of entities of the virtual fab (pg. 6, ¶ [0080, Base lot field is a derived number indicator used for tracking the lot for a buyer through all the suppliers]; see also, pg. 13 ¶ [0136, lot tracking report]); instructions for a communications interface for interacting with a enterprise control entity and the plurality of event elements (pg. 3, ¶ [0050, internet communication means between buyers and multiple suppliers, see Fig. 1 and associated text]); instructions for determining a future location for the product and the associated information through the virtual fab via the enterprise control entity (pg. 14, ¶ [0165-0167, lot tracking data used for all the production; see also, pg. 3, ¶ [0025, lot tracking maintenance such as cycle time, yield analysis, cost reporting each stage of the supply chain]; see also, pg. 8, ¶ [0085-0087, estimated finished good is calculated based on the standard cycle time of each stage]); and instructions for amending the associated information to the recordable medium through the virtual fab (pg. 6, ¶ [0072, via communication over the internet data is converted via converter and stored in the raw data store]).

As per claim 22, Yang discloses wherein the plurality of entities include: at least one entity associated with a primary provider manufacturing executing system in the virtual fab (pg. 1, ¶ [0010, dominating buyer or dominating supplier]); at least one entity associated with a secondary provider manufacturing executing system in the virtual fab (pg. 1, ¶ [0010, dominating buyer or dominating supplier]); at least one entity associated with a manufacturer of the semiconductor equipment vendor (pg. 1, ¶ [0009-0010, outsourcing semiconductor manufacturing industry between buyers and suppliers); at least one entity associated with a manufacturer of the sub-contractor (pg. 15, ¶ [0173, reporting accuracy among multiple suppliers and multiple buyers and multiple suppliers]); at least one entity associated with a manufacturer of the semiconductor design house (pg. 2, ¶ [0019, IC-design house deals with multiple suppliers that provide various outsourcing functions at different supplier stages]); at least one entity associated with a customer of products being manufactured by the semiconductor fab (pg. 6, ¶ [0069, multistage supply chain environment for multiple buyers and multiple suppliers]; see also, pg. 13, ¶ [0132-0133, multiple supplier branch in a supply chain transaction); and at least one entity associated with engineering support for the either or both of the primary and second manufacturing executing system (pg. 15, ¶ [0178, production control engineers and other production control personnel]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8, 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang in view of Luce et al. U.S. Patent No. 7,356,558 (hereinafter referred to as Luce).

As per claim 8, Yang discloses claim 7 as rejected above but does not explicitly disclose assigning event elements to the product through the virtual fab.

Luce teaches assigning the manufacturing route and path in the production process for the work order. (col. 11, lines 60 - col. 12, lines 7, manufacturing path is assigned and route for sequence of steps).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the semiconductor manufacturing environment of Yang to include the manufacturing path and sequence of production steps as taught by Luce in order to create data consistency between suppliers to buyers and have a means for monitoring and controlling manufacturing processes where both parties are better able to control the overall cost.

As per claim 9, Yang discloses claim 7 as rejected above but does not explicitly disclose wherein the event elements include process completion at a predetermined check point

Luce teaches a way of validating and checking inventory movement in order to track down any types of errors that can lead to routing failure (col. 10, lines 30-54, set inventory valuation points in the inventory valuation system; see also, col. 12, lines 48 – col. 13, line 31, validation process to track and check inventory).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the semiconductor manufacturing environment of Yang to include the validation and checking procedure as taught by Luce in order for the valuation points in an

inventory valuation system to reduce errors involved in the production of the product to be manufactured which helps maintain the lowest cost production possible.

As per claim 10, Yang discloses claim 7 as rejected above but does not explicitly disclose wherein the event elements of the primary provider and the secondary provider comprise product process steps, the event elements track the product through the virtual fab.

Luce teaches a quality audit, production, and supplies tracking elements to monitor and control the entire manufacturing process between primary manufacturer and suppliers (col. 3, lines 18-56, primary manufacturer receives manufacturing related data and other tracking data from independent supplier via a network or the like).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the semiconductor manufacturing environment of Yang to include a manufacturing process that monitors and controls the manufacturing steps as taught by Luce in order to improve supply chain management methods which will help reduce time delays, costs of goods and services.

Examiner has pointed out particular references contained in the prior arts of record in the body of this action for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the response, to consider fully the entire references as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior arts or disclosed by the examiner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BOB CHUMPITAZ whose telephone number is (571)270-5494. The examiner can normally be reached on M-TR: 7:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BRADLEY BAYAT can be reached on (571) 272-6704. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

B. C.
Examiner, Art Unit 4115

/Bradley B Bayat/
Supervisory Patent Examiner, Art Unit 4115